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ABSTRACT

The purpose of this study was to discover the extent to which the satisfaction of graduate students is associated with the collegiality of faculty-student relationships within the student's own department, the competitiveness of student-student relationships within the department, and the discrepancy between what the student expected graduate school to be like and the reality of graduate school as he perceives it. Seven hundred and sixty-two graduate students at a Midwestern University were administered a questionnaire; 589 usable responses were returned. On the basis of a pilot study and item analyses, Likert scales were constructed for the measurement of the major variables of this inquiry. Each item was scored on a 5-point scale, the high score indicating a high level of satisfaction. The findings indicated that the collegiality of faculty-student relationships is a highly effective predictor of both academic and nonacademic satisfaction for all categories of students, whether grouped by sex, department size, school within the university, or degree objective. Competitiveness of student-student relationships is a consistently negative predictor of both types of satisfaction. Expectation-reality discrepancy is also negatively associated with both types of satisfaction. (AF)

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GRADUATE STUDENT SATISFACTION: ACADEMIC AND NON-ACADEMIC*

by

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The research that is described and reported in this paper is a part of a much larger study of the social context of graduate education. This paper is focused upon the levels of satisfaction, both academic and non-academic, that are experienced by graduate students within the milieu of graduate education. The objective of this inquiry is to discover the extent to which the satisfaction of graduate students is associated with the collegiality of faculty-student relationships within the department within the university in which the student is enrolled, the competitiveness of student-student relationships within the department, and the discrepancy between what the student expected graduate school to be like and the reality of graduate school as he perceives it.

Satisfaction with one's experience within the milieu of education may be related not only to the level of achievement attained but also to the retention of students in educational programs at various levels of education. There is some evidence that unsatisfactory experience with education and its environment is often a precursor to dropping out of an educational program. Also, many instances of student unrest at all levels of education appear to be, in part at least, an overt expression of dissatisfaction with the milieu of education. There is a growing need for research which is aimed at identifying and assessing those variables that are related to satisfying educational experiences. Furthermore, this research provides some evidence that greater efforts need to be made toward equipping people with accurate and realistic expectations for education at the level at which they are anticipating entering so that the expectation-reality discrepancy can be reduced.

Wright (1964) examined certain facets of the integration of graduate students into the graduate school environment including such things as whether students talk to faculty about personal matters; whether students talk to faculty frequently outside the classroom; and whether they counted some fellow graduate students as really close friends. In general, he found that social adjustment and integration into the department was consistently, and often significantly, related to academic success on the doctoral level. However, these variables were not generally related to success on the master's level.

The role relations of graduate students were examined by Baird (1969) in a study in which he developed scales around a theoretical description of the relationships of graduate students with one another, faculty, and others. One of his most striking findings was that if the role relationships among students were competitive, students always felt under stress no matter what the rest of their role relations were like. Students did not necessarily experience great tension when they were required to meet very difficult standards, but they <u>always</u> felt under stress when they were in a competitive situation.

From a search of the literature, it appears to this writer that virtually no research has been done on the expectations that students have for graduate school and how expectations relate to other variables such as satisfaction in graduate school; this is one of the main concerns of the present investigation. The following study by Wernimont (1966), although it does not deal with graduate students, does have some relevance for this question.

Wernimont's study of job satisfaction indicates that job expectations and expectations of what the work contract consists of are very important to the satisfaction or dissatisfaction of persons on their jobs. The person approaches his job with culturally influenced views as to what to expect from the employer and what the employer expects from him. These expectations may be accurate or inaccurate. Wernimont's findings indicate that the more closely the reality of the job "measures up" to expectation, the higher the level of job satisfaction. Good relationships with the boss and technical competence of the boss were found to be directly related to job satisfaction. Intrinsic factors such as these as well as the factor of personal fulfillment in the occupation were found to be more strongly related to job satisfaction than were extrinsic factors such as wages, hours, working conditions, and prestige of the job.

In a study of "job" satisfaction among graduate students, Levine and Weitz (1968) performed a factor analysis on several factors or items with which a graduate student might be satisfied or dissatisfied. A major source of dissatisfaction at both universities in their study was found to be student voice in influencing departmental policy; this, however, varied according to the sex of the student. It was found that satisfaction with independent thought and action and voice in departmental affairs are more importantly related to overall satisfaction for males than for females. Satisfaction with faculty-student discussion was found to be more highly related to overall satisfaction for females than for males.

According to the findings of the research conducted by Heiss (1967) at Berkeley, doctoral students indicate a need for a more personalized orientation and for more interaction with their professors.

The present research effort follows some of the same lines of inquiry of the studies reviewed above. The following predictions are made: 1) Both types of satisfaction will be positively associated with collegiality of faculty-student relationships. 2) Both types of satisfaction will be negatively associated with competitiveness of student-student relationships. 3) Both types of satisfaction will be negatively associated with expectation-reality discrepancy.

Method

Data Source

The data for this research were collected in the spring of 1969 from the graduate student body of a large Midwestern university. In order to be included in the sample used in this investigation, a graduate student had to be: 1) enrolled in the Graduate School on the main campus of this particular university and 2) pursuing a graduate degree objective on either a full-or part-time basis. The Initial sample consisted of a systematically drawn random sample of 863 students. Every fifth graduate student was selected from the registrar's enrollment list which was a straight alphabetical listing, the starting point being randomly selected.

Two hundred ninety of these (every third case) were used in a pretest or pilot study to examine and to refine the mail questionnaire. One hundred sixty-one (56 percent) of these were returned. The remaining sample of 574 cases was augmented by 188 cases which were added at random

to increase the number of cases from certain schools within the university for certain analyses. Thus, for certain analyses a stratified random sample is used.

A total of 589 useable questionnaires were returned; 451 of these were from the unaugmented random sample. This represents a response rate of 79 percent.

Variables and Measurement

On the basis of the pilot study and item analyses, Likert scales were constructed for the measurement of the major variables of this inquiry. Each item is scored on a five-point scale with the scoring set up so that the higher the score the greater the satisfaction, or the higher the degree of collegiality, etc.

I. Faculty-student relationships (Collegiality)

This variable refers to the extent to which the respondent perceives the relationships between faculty members and graduate students in his department to be of a collegial nature. For brevity, this variable will be referred to simply as "collegiality."

Measurement. A measure of collegiality is obtained by summing the scores of the eleven statements below which are scored in a Likert manner with strongly agree receiving a score of one and strongly disagree receiving a score of five. Since the wording of the statements is not in the same direction for all statements, it is necessary to reverse the respondents' scores on certain items before summint them; RS following a statement indicates this. The scoring is set up so that the higher the score, the more collegial the relationship. The statements are:

1. Social contacts between graduate students and faculty in my department are almost always initiated by faculty members.

2. In my department faculty members often seek out graduate students' ideas in regard to course preparation and/or research. RS
3. In general, faculty members in my department are against graduate student participation in departmental decision-making.
4. In my department the major tasks of many graduate student appointments consist of doing "dirty work" in research and/or teaching for faculty members.
5. Some of my best friends in my department are faculty members. RS
6. Several faculty members in my department have a condescending attitude toward graduate students.
7. When I go into a faculty member's office for assistance or advice, I usually feel that I am imposing upon him.
8. When I encounter a problem in my academic work, I would rather take it to a fellow graduate student than to a faculty member.
9. Generally speaking, faculty members in my department treat me more like a colleague than a student. RS
10. In my department graduate students are the last to be informed about departmental developments, changes, etc.
11. When prospective faculty members visit our department, the graduate students are given an opportunity for talking with them. RS

II. Student-student relationships (Competitiveness)

The variable referred to here is the extent to which the respondent perceives the relationships among the graduate students in his department as being more cooperative or more competitive. In the interest of brevity, and because of the way in which the measurement of this variable is structured, this variable will be referred to simply as "competitiveness."

Measurement. A measure of competitiveness is obtained by summing the scores of the seven statements below which are scored in a Likert manner with agree strongly receiving a score of one and disagree strongly receiving a score of five. For some statements it is necessary to reverse the scoring since not all the statements are worded in the same direction. RS after a statement indicates that the scoring of that item is to be reversed. The scoring is set up so that the higher the score, the greater the competitiveness. The statements are:

In my department:

1. generally speaking, graduate students do not find that they can rely upon each other a great deal for emotional support. RS
2. preparation for examinations such as prelims, qualifiers, and orals is often a cooperative effort among graduate students.
3. the more advanced graduate students make a conscientious effort to help the new students to make adjustments to graduate school.
4. competition is very strong among graduate students for rewards such as grades, honors, and other awards. RS
5. the individual graduate student has to look out pretty much for himself. RS

6. I feel that I can rely upon other graduate students in times of personal difficulties of various kinds.
7. generally there is a feeling of rather intense (though possibly subtle) competition among the graduate students. RS

III. Expectation-reality discrepancy (ERD)

This is the difference or the discrepancy between what the student says he expected to encounter in graduate school when he entered it and what he perceives to be the reality of graduate school as he has experienced it.

Measurement. The following twelve statements are scored in a Likert manner on a five-point scale with strongly agree receiving a score of one and strongly disagree receiving a score of five. A measure of expectation-reality discrepancy is obtained by taking the absolute difference between the scores of each of the following pairs of items; these absolute differences are then summed. Since the wording of the statements is not in the same direction for all statements, it is necessary to reverse the scoring of certain ones. RS after a statement indicates that the respondent's score on that item is to be reversed before taking the absolute difference between the score on that item and the score on the item with which it is paired. (The higher the sum of the absolute differences, the greater the ERD.) This measurement scheme can be expressed as: ERD = 1 - 2 + 3 - 4 + . . . + 11 - 12 where the numbers refer respectively to the scores on the following statements:

1. When I entered graduate school, I expected that the major tasks of many graduate student appointments would consist of doing "dirty work" in research and/or teaching for faculty members.

2. In my department the major tasks of many graduate student appointments consist of doing "dirty work" in research and/or teaching for faculty members.
3. When I entered graduate school, I expected to be generally treated more like a colleague than a student by the faculty members in my department.
4. Generally speaking, faculty members in my department treat me more like a colleague than a student.
5. When I entered graduate school, I expected that graduate students would usually be consulted before departmental decisions of various kinds were made. RS
6. In my department graduate students are the last to be informed about departmental developments, changes, etc.
7. When I entered graduate school, I expected that preparation for examinations such as prelims, qualifiers, and orals would often be a cooperative effort among graduate students in my department.
8. In my department, preparation for examinations such as prelims, qualifiers, and orals is often a cooperative effort among graduate students.
9. When I entered graduate school, I expected that there would be little competition among the graduate students in my department for things such as grades, honors, and other awards. RS
10. In my department, competition is very strong among graduate students for rewards such as grades, honors, and other awards.

IV. Academic satisfaction

This variable is the degree of satisfaction which the respondent expresses toward the academic-professional aspect of graduate school as he has experienced it. This refers to the extent to which the student is satisfied with things such as the professional climate of his department, the quality of teaching, the nature of the arrangements made for his preparation, evaluation, and certification as a degree candidate and as a professional. The term used in referring to this variable is "academic satisfaction."

Measurement. Academic satisfaction is measured by summing the scores on the fourteen statements below which are scored in a Likert manner on a five-point scale with highly satisfied receiving a score of one and highly dissatisfied receiving a score of five. Before summing, the respondents' scores on all the statements are reversed so that a high score indicates high satisfaction. The statements are:

How satisfied are you with:

1. the professional climate in your department?
2. the faculty in your department?
3. the overall graduate program in your department?
4. what is expected of you as a graduate student by your faculty?
5. the opportunity that graduate school affords for independent study?
6. the relevance of your graduate work for the present-day world and its problems?
7. the quality of teaching in graduate courses in your department?

8. the methods by which graduate students are evaluated in your department?
9. the guidance and cooperation given to you by your advisory committee?
10. the working relationship with your major professor?
11. the encouragement given to you by your advisory committee and/or the other faculty members to complete your degree objective?
12. requirements for your degree objective?
13. the average length of time required for a graduate student to complete his degree objective in your department?
14. the degree of commitment of other graduate students in your department to your discipline?

V. Non-academic satisfaction

Non-academic satisfaction refers to the degree to which the respondent expresses satisfaction with things such as physical facilities and interpersonal relationships among the graduate students in his department, i.e., various aspects of the graduate education milieu other than the academic.

Measurement. Non-academic satisfaction is measured by summing the respondent's scores on the following ten statements which are scored in a Likert manner with highly satisfied receiving a score of one and highly dissatisfied receiving a score of five. Before summing, the scores on all the items are reversed so that the higher the score, the higher the satisfaction. The statements are:

How satisfied are you with:

1. the facilities (laboratories, libraries, office space, etc.) available to you?
2. the effort made by your departmental chairman, committee chairmen, and others to keep graduate students informed on departmental matters?
3. the power of the graduate students in your department in departmental decision-making?
4. the amount of freedom that you have as a graduate student to "do your thing"?
5. the opportunity to get to know graduate students and faculty members in other departments on campus?
6. the opportunity for discussing career plans with faculty members?
7. the social relationships between faculty and graduate students in your department?
8. the relationships among faculty members themselves in your department?
9. the degree of cooperation among graduate students in your department toward completing course assignments and conducting research projects?
10. the opportunities for organized social gatherings of graduate students and/or faculty members in your department?

RESULTS

In all the analyses the following variables are systematically controlled: Sex, department size, school within the university, and degree objective.

Sex is controlled since there is some reason to believe that the relationships among the major variables may differ according to sex. The environment of graduate education is, by and large, a male environment. With the exception of just a few departments, most graduate students are males, most graduate faculty are males, and virtually all departmental chairmen are males. Consequently, there may be good reason to suspect that the female graduate student will perceive the department quite differently than will the male.

Department size is used as a control since some of the major variables such as competitiveness and collegiality may vary considerably with department size. Also, the relationships among the important variables may differ by department size. A small department is defined as one with less than fifty graduate students. Medium size departments are those with fifty to ninety-nine graduate students, while a large department is one having one hundred or more graduate students.

Ideally, the effects of specific departments also would be controlled, but there are too many departments relative to sample size for this procedure to be feasible. Thus, the alternative of controlling by school was followed on the assumption that the departments within a school were generally more similar than departments not located within the same school. In only one instance is an individual department singled out; this is the department of Education. The School of Humanities, Social Science, and Education is dichotomized into Education and non-Education.

The degree objective of the student, i.e., whether his immediate degree objective is the Master's Degree or the Ph.D. Degree, is controlled. The decision to use degree objective as a control variable is based on the

finding by Wright (1964) that social adjustment and integration into the department is consistently related to academic success on the doctoral level but not generally related to success on the master's level.

The first hypothesis to be examined is that the more collegial faculty-student relationships are, the higher will be the level of satisfaction, both academic and non-academic, that will be expressed by the student.

It can be seen in Table 1 that the predicted positive correlation obtains for both types of satisfaction at the .05 level of significance or higher regardless of which control is used. In fact, the correlation coefficients are significant at the .005 level or higher in all but five instances. When academic satisfaction is the dependent variable, the correlation is significant at .01 for students in Veterinary Science and Medicine; in all other instances it is significant at .005 or higher. When non-academic satisfaction is the dependent variable, the correlation is significant at .05 for students in Industrial Administration and Veterinary Science and Medicine, and it is significant at .01 for students in Technology; in all other instances it is significant at the .005 level or higher.

Generally, collegiality is a slightly better predictor of academic satisfaction than of non-academic satisfaction. The notable exception to this is female students. Collegiality becomes a slightly better predictor of both types of satisfaction as department size increases, but the increase in the magnitude of the correlation coefficients is not especially striking. Collegiality is a somewhat better predictor of both types of satisfaction for doctoral students than for students at the master's level; this is true regardless of sex. This finding is consis-

tent with that of Wright which was reviewed earlier.

Thus, the first hypothesis is very strongly supported by the data.

The next hypothesis to be examined is that the more competitive student-student relationships are, the lower will be the level of both types of satisfaction expressed by the student, i.e., both types of satisfaction will vary inversely with competitiveness of student-student relationships.

Looking at Table 2, it can be seen that the predicted inverse relationships hold for all groupings of students, the only exception being the students in the School of Industrial Administration. The correlation coefficients are significant at the .05 level or better for all categories of students except for academic satisfaction for Engineering students and except for both types of satisfaction for students in the Schools of Technology and Veterinary Science and Medicine and female students at the Ph.D. level.

Generally, competitiveness is a somewhat better negative predictor of non-academic satisfaction than of academic satisfaction. Competitiveness becomes a markedly better negative predictor of both types of satisfaction as department size decreases. When degree objective is used as a control, competitiveness is a better negative predictor of both types of satisfaction for male Ph.D. students, whereas the reverse is strikingly true for females, i.e., competitiveness is much more strongly and negatively related to both types of satisfaction for females at the master's level than at the doctoral level.

The data, then, very strongly support the second hypothesis.

Last to be tested is the hypothesis that both types of satisfaction will be inversely related to expectation-reality discrepancy (ERD).

An examination of Table 3 reveals that the predicted negative relationships do in fact obtain for all categories of students except for females and students in the School of Agriculture. In twenty-one of the forty-four instances, the correlations are significant at the .05 level or better. Generally, ERD is a better negative predictor of academic satisfaction than of non-academic satisfaction.

ERD is a considerably better negative predictor of both types of satisfaction for males than for females. In fact, for females the correlations are very close to zero. ERD is a somewhat better negative predictor of both types of satisfaction for both small and large departments than for departments of medium size. Finally, ERD is a better negative predictor of both types of satisfaction for students at the doctoral level than for those at the master's level; this is true only for males.

Thus, the data do provide a moderate amount of support for the third hypothesis.

When all three independent variables--collegiality, competitiveness, and ERD--are simultaneously used as predictors of both types of satisfaction, the multiple correlation coefficients presented in Table 4 are yielded. These correlation coefficients are significant at the .01 level or higher for all groupings of students except for those in the School of Technology, which are significant at the .05 level, and those in the School of Veterinary Science and Medicine which did not attain the .05 level.

SUMMARY AND CONCLUSION

Collegiality of faculty-student relationships is a highly effective and consistent predictor of both academic satisfaction and non-academic satisfaction for all categories of students whether grouped by sex, department size, school within the university, or degree objective. The correlation coefficients yielded by these variables are quite large, positive, and highly statistically significant.

Competitiveness of student-student relationships is a consistently negative predictor of both types of satisfaction, the only exception being the students in the School of Industrial Administration. Although the resulting correlation coefficients are negative, as predicted, and highly statistically significant, they are somewhat smaller than those resulting when collegiality is the independent variable.

As predicted, expectation-reality discrepancy is negatively associated with both types of satisfaction; the only exceptions are females and students in the School of Agriculture. However, ERD is not nearly as good a predictor of either type of satisfaction as either collegiality or competitiveness.

In conclusion, of the variables examined in this study, collegiality of faculty-student relationships is by far the best predictor of both academic satisfaction and non-academic satisfaction as experienced by graduate students.

In future research efforts, the sex factor, as well as department size, needs to be more thoroughly examined. Also, the relationship between collegiality and competitiveness needs to be explored. Although this relationship is not examined in this paper, the data presented above suggest that collegiality and competitiveness are inversely related to each other since they are related to a third variable in opposite directions.

Table 1. Zero-Order Correlation Coefficients for Academic Satisfaction and Non-Academic Satisfaction with Collegiality of Faculty-Student Relationships (by Sex, Department Size, School, and Degree Objective).

	N	r(Acad Sat)	r(Non-Acad Sat)
Sex			
Male	351	.604***	.591***
Female	100	.555***	.650***
Department Size			
Small	77	.577***	.526***
Medium	86	.581***	.530***
Large	288	.593***	.609***
School			
Agriculture	56	.630***	.467***
Engineering	90	.664***	.640***
Home Economics	54	.781***	.744***
Education	55	.655***	.616***
Humanities/Social Sci	70	.632***	.687***
Industrial Adm	33	.621***	.393*
Pharmacy	82	.618***	.688***
Science	108	.507***	.637***
Technology	16	.711***	.602**
Veterinary Sci/Med	25	.455**	.442*
Degree Objective			
Master's (All)	175	.524***	.540***
Ph.D. (All)	249	.636***	.589***
Master's (Males)	110	.556***	.594***
Ph.D. (Males)	219	.631***	.601***
Master's (Females)	65	.507***	.632***
Ph.D. (Females)	30	.574***	.659***
All Students	451	.587***	.577***

*Significant at .050 (one-tailed).
**Significant at .010 (one-tailed).
***Significant at .005 (one-tailed).

Table 2. Zero-Order Correlation Coefficients for Academic Satisfaction and Non-Academic Satisfaction with Competitiveness of Student-Student Relationships (by Sex, Department Size, School, and Degree Objective).

	N	r(Acad Sat)	r(Non-Acad Sat)
Sex			
Male	351	-.188***	-.314***
Female	100	-.332***	-.382***
Department Size			
Small	77	-.289**	-.408***
Medium	86	-.282***	-.379***
Large	288	-.151**	-.236***
School			
Agriculture	56	-.414***	-.447***
Engineering	90	-.135	-.354***
Home Economics	54	-.441***	-.228*
Education	55	-.341**	-.278*
Humanities/Social Sci	70	-.352***	-.398***
Industrial Adm	33	.153[a]	.144[a]
Pharmacy	82	-.384***	-.508***
Science	108	-.182*	-.367***
Technology	16	-.340	-.094
Veterinary Sci/Med	25	-.064	-.320
Degree Objective			
Master's (All)	175	-.157*	-.325***
Ph.D. (All)	249	-.282***	-.281***
Master's (Males)	110	-.091	-.161***
Ph.D. (Males)	219	-.234***	-.288***
Master's (Females)	65	-.425***	-.445***
Ph.D. (Females)	30	-.200	-.271
All Students	451	-.212***	-.304***

[a]Not in the predicted direction.
*Significant at .050 (one-tailed).
**Significant at .010 (one-tailed).
***Significant at .005 (one-tailed).

Table 3. Zero-Order Correlation Coefficients for Academic Satisfaction and Non-Academic Satisfaction with Expectation-Reality Discrepancy (by Sex, Department Size, School, and Degree Objective).

	N	r(Acad Sat)	r(Non-Acad Sat)
Sex			
Male	351	-.240***	-.193***
Female	100	.045[a]	-.025
Department Size			
Small	77	-.203**	-.182*
Medium	86	-.130	-.073
Large	288	-.196***	-.174***
School			
Agriculture	56	.017[a]	-.025
Engineering	90	-.324***	-.150
Home Economics	54	-.127	.014[a]
Education	55	-.133	-.245*
Humanities/Social Sci	70	-.193	-.225*
Industrial Adm	33	-.522***	-.431**
Pharmacy	82	-.333***	-.316***
Science	108	-.130	-.085
Technology	16	-.291	-.530*
Veterinary Sci/Med	25	-.131	-.102
Degree Objective			
Master's (All)	175	-.118	-.074
Ph.D. (All)	249	-.221***	-.200***
Master's (Males)	110	-.198*	-.020
Ph.D. (Males)	219	-.253***	-.232***
Master's (Females)	65	.041[a]	-.079
Ph.D. (Females)	30	.036[a]	.091[a]
All Students	451	-.181***	-.153***

[a]Not in the predicted direction.
*Significant at .050 (one-tailed).
**Significant at .010 (one-tailed).
***Significant at .005 (one-tailed).

Table 4. Multiple Correlation Coefficients for Academic Satisfaction and Non-Academic Satisfaction with Collegiality of Faculty-Student Relationships, Competitiveness of Student-Student Relationships, and Expectation-Reality Discrepancy (by Sex, Department Size, School, and Degree Objective).

	N	R(Acad Sat)	R(Non-Acad Sat)
Sex			
Male	351	.613**	.612**
Female	100	.575**	.680**
Department Size			
Small	77	.599**	.583**
Medium	86	.589**	.577**
Large	288	.602**	.618**
School			
Agriculture	56	.664**	.557**
Engineering	90	.670**	.666**
Home Economics	54	.796**	.756**
Education	55	.683**	.630**
Humanities/Social Sci	70	.654**	.716**
Industrial Adm	33	.718**	.523*
Pharmacy	82	.638**	.731**
Science	108	.518**	.651**
Technology	16	.735*	.704*
Veterinary Sci/Med	25	.485	.476
Degree Objective			
Master's (All)	175	.528**	.564**
Ph.D. (All)	249	.647**	.602**
Master's (Males)	110	.562**	.620**
Ph.D. (Males)	219	.640**	.614**
Master's (Females)	65	.546**	.666**
Ph.D. (Females)	30	.614**	.713**
All Students	451	.594**	.593**

*Significant at .05
**Significant at .01

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